

In the Claims

Cancel claim 15 and amend claims 1, 16, 18, 21 and 22 as follows:

1. (Currently Amended) A device adapted to function as an antifuse, said device comprising:
a first conductor;
a second conductor, wherein the first conductor is positioned above the second conductor;
and
an insulator layer disposed between said first and second conductors, wherein the first conductor has an intersection perimeter that comprises ~~edges-portions~~ edge regions of the first conductor, wherein the ~~edges-portions~~ edge regions of the first conductor are positioned directly above the second conductor, wherein a minimum voltage between the first and second conductors is required to create a current path between the first and second conductors through the insulator layer, and wherein the current path created by a voltage that is not less than the minimum voltage would traverse the insulator layer essentially at the intersection perimeter rather than elsewhere, said intersection perimeter forming an edge perimeter.
2. (Previously Amended) The device of claim 1, wherein the insulator layer is thinner directly beneath the edge perimeter than elsewhere beneath the first conductor.
3. (Previously Amended) The device of claim 1, wherein the first conductor comprises a gate material, wherein the second conductor comprises a doped region, and wherein the doped region is more highly doped directly beneath the edge perimeter than elsewhere beneath the first conductor.
4. (Previously Amended) The device of claim 1, wherein the minimum voltage is equal to about a burn-in voltage for reliability testing of the device, and wherein the burn-in voltage exceeds a normal operating voltage for the device.
5. (Previously Amended) The device of claim 1, wherein the current path is oriented essentially perpendicular to both the first and second conductors.
6. (Previously Amended) The device of claim 1, wherein the first conductor comprises a first plurality of fingers, wherein the fingers of each pair adjacent fingers of the first plurality of fingers are separated by a gap, wherein the fingers of the first plurality of fingers are each oriented in a first direction, and wherein the intersection perimeter comprises line segments coinciding with edge portions of the first plurality of fingers, and wherein the line segments are each oriented in essentially the first direction.
7. (Previously Amended) The device of claim 6, wherein the gap between adjacent fingers of the first plurality of fingers exposes a portion of said second conductor.
8. (Previously Amended) The device of claim 6, wherein each finger of the first plurality of fingers has substantially a same width in a second direction that is essentially perpendicular to the first direction.

9. (Previously Amended) The device of claim 6, wherein the second conductor comprises a second plurality of fingers, wherein the fingers of each pair adjacent fingers of the second plurality of fingers are separated by a gap, wherein the fingers of the second plurality of fingers are each oriented in a second direction, and wherein the second direction is essentially perpendicular to the first direction.

10. (Previously Amended) The device of claim 1, wherein the second conductor comprises a plurality of fingers, wherein the fingers of each pair adjacent fingers of the plurality of fingers are separated by a gap, wherein the intersection perimeter comprises line segments oriented in a first direction, wherein the fingers of the plurality of fingers are each oriented in a second direction that is essentially perpendicular to the first direction.

11. (Previously Amended) The device of claim 10, wherein a first finger of the plurality of fingers of the second conductor has a first width in the first direction, wherein a second finger of the plurality of fingers of the second conductor has a second width in the first direction, and wherein the second width is substantially unequal to the first width.

12-14. (Previously Canceled)

15. (Canceled)

16. (Currently Amended) ~~The method of claim 15, wherein said step of increasing the length of the intersection perimeter comprises the step of~~ A method for increasing the statistical programming of an antifuse, said method comprising the steps of:

forming a first conductor and a second conductor separated by a dielectric layer, wherein the first conductor is positioned above the second conductor, wherein the first conductor has an intersection perimeter that comprises edge regions of the first conductor wherein the edge regions of the first conductor are positioned directly above the second conductor, wherein a minimum voltage between the first and second conductors is required to create a current path between the first and second conductors through the dielectric layer; and

increasing the length of the intersection perimeter by forming a plurality of fingers in at least one of said first and second conductors by patterning and etching, and wherein the fingers of each pair adjacent fingers of the plurality of fingers are separated by a gap.

17. (Previously Amended) The method of claim 16, further comprising doping the second conductor to form a doped region in the second conductor, wherein the doped region is more highly doped directly beneath the edge perimeter than elsewhere beneath the first conductor.

18. (Currently Amended) The method of claim 15 16, further comprising the step of applying a programming voltage not less than the minimum voltage to create the current path between the first and second conductors through the dielectric layer, wherein the current path created by the programming voltage would traverse the dielectric layer essentially at the intersection perimeter rather than elsewhere.

19. (Previously Amended) The method of claim 18, wherein the dielectric layer is thinner directly beneath the edge perimeter than elsewhere beneath the first conductor.

20. (Previously Amended) The method of claim 16, wherein the step of forming a plurality of fingers comprises forming a first plurality of fingers integrally with the first conductor, wherein the fingers of each pair adjacent fingers of the first plurality of fingers are separated by a gap, wherein the fingers of the first plurality of fingers are each oriented in a first direction, and wherein the intersection perimeter comprises line segments coinciding with edge portions of the first plurality of fingers, and wherein the line segments are each oriented in essentially the first direction.

21. (Currently Amended) The method of claim 20, wherein the ~~the~~ step of forming a plurality of fingers further comprises forming a second plurality of fingers integrally with the second conductor, wherein the fingers of each pair adjacent fingers of the second plurality of fingers are separated by a gap, wherein the fingers of the second plurality of fingers are each oriented in a second direction, and wherein the second direction is essentially perpendicular to the first direction.

22. (Currently Amended) The method of claim 16, wherein the ~~the~~ step of forming a plurality of fingers comprises forming a plurality of fingers integrally with the second conductor, wherein the fingers of each pair adjacent fingers of the plurality of fingers are separated by a gap, wherein the intersection perimeter comprises line segments oriented in a first direction, wherein the fingers of the plurality of fingers are each oriented in a second direction that is essentially perpendicular to the first direction.

23. (Previously Added) The method of claim 18, wherein the current path is oriented essentially perpendicular to both the first and second conductors.